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=> s antibodies
L1 1423218 ANTIBODIES

=> s l1 and egg yolk
L2 1757 L1 AND EGG YOLK

=> s l2 and IgY
L3 415 L2 AND IGY

=> s l3 and streptococcus mutans
L4 13 L3 AND STREPTOCOCCUS MUTANS

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L5 9 DUP REMOVE L4 (4 DUPLICATES REMOVED)

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L5 ANSWER 1 OF 9 MEDLINE DUPLICATE 1
2001248116 Document Number: 21189229. PubMed ID: 11292733. Passive transfer of immunoglobulin Y antibody to **Streptococcus mutans** glucan binding protein B can confer protection against experimental dental caries. Smith D J; King W F; Godiska R. (Department of Immunology, The Forsyth Institute, Boston, Massachusetts 02115, USA.) INFECTION AND IMMUNITY, (2001 May) 69 (5) 3135-42. Journal code: 0246127. ISSN: 0019-9567. Pub. country: United States. Language: English.

AB Active immunization with **Streptococcus mutans** glucan binding protein B (GBP-B) has been shown to induce protection against experimental dental caries. This protection presumably results from continuous secretion of salivary antibody to GBP-B, which inhibits accumulation of S. mutans within the oral biofilm. The purpose of this study was to explore the influence of short-term (9- or 24-day) passive

oral administration of antibody to S. mutans GBP-B on the longer-term accumulation and cariogenicity of S. mutans in a rat model of dental caries. Preimmune chicken **egg yolk** immunoglobulin Y (**IgY**) or **IgY** antibody to S. mutans GBP-B was supplied in lower (experiment 1) and higher (experiment 2) concentrations in the diet and drinking water of rats for 9 (experiment 1) or 24 (experiment 2) days. During the first 3 days of **IgY** feeding, all animals were challenged with 5 x 10(6) streptomycin-resistant S. mutans strain SJ-r organisms. Rats remained infected with S. mutans for 78 days, during which rat molars were sampled for the accumulation of S. mutans SJ-r bacteria and total streptococci. Geometric mean levels of S. mutans SJ-r accumulation on molar surfaces were significantly lower in antibody-treated rats on days 16 and 78 of experiment 2 and were lower on all but the initial (day 5) swabbing occasions in both experiments. Relative to controls, the extent of molar dental caries measured on day 78 was also significantly decreased. The decrease in molar caries correlated with the amount and duration of antibody administration. This is the first demonstration that passive antibody to S. mutans GBP-B can have a protective effect against cariogenic S. mutans infection and disease. Furthermore, this decrease in infection and disease did not require continuous antibody administration for the duration of the infection period. This study also indicates that antibody to components putatively involved only in cellular aggregation can have a significant effect on the incorporation of mutans streptococci in dental biofilm.

L5 ANSWER 2 OF 9 SCISEARCH COPYRIGHT 2002 ISI (R)

2001:41278 The Genuine Article (R) Number: 388KG. Randomized, placebo-controlled, clinical trial of hyperimmunized chicken **egg yolk** immunoglobulin in children with rotavirus diarrhea. Sarker S A (Reprint); Casswall T H; Juneja Y R; Hoq E; Hossain I; Fuchs G J; Hammarstrom L. Ctr Hlth & Populat Res, ICDDRB, Div Clin Sci, Dhaka 1212, Bangladesh (Reprint); Huddinge Univ Hosp, Karolinska Inst, Dept Immunol Microbiol Pathol & Infect Dis, Stockholm, Sweden; Huddinge Univ Hosp, Karolinska Inst, Dept Clin Sci, Div Pediat, Stockholm, Sweden; Taiyo Kagaku Co Ltd, Nutr Foods Div, Yokkaichi, Japan. JOURNAL OF PEDIATRIC GASTROENTEROLOGY AND NUTRITION (JAN 2001) Vol. 32, No. 1, pp. 19-25. Publisher: LIPPINCOTT WILLIAMS & WILKINS. 530 WALNUT ST, PHILADELPHIA, PA 19106-3621 USA. ISSN: 0277-2116. Pub. country: Bangladesh; Sweden; Japan. Language: English.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Background: Hyperimmunized bovine colostrum containing **antibodies** has been shown to be effective in the treatment of rotavirus diarrhea. **Antibodies** derived from eggs of immunized hens may be a less expensive and more practical alternative. In this study, children with proven rotavirus diarrhea were treated with immunoglobulin extracted from eggs of chicken immunized with human rotavirus strains.

Methods: In a randomized, double-blind study, 79 children with known rotavirus diarrhea were assigned to receive either 10 g hyperimmune **egg yolk** (HEY) daily in four equally divided doses for 4 days (HEY group) or a similar preparation obtained from nonimmunized chicken (placebo group). The daily stool frequency and amount, oral rehydration solution (ORS) intake, and presence of rotavirus in the stool were monitored for 4 days.

Results: In the HEY-treated group. there was significant reduction in stool output (in grams per kilogram per day; HEY vs. placebo; 87 +/- 59 vs. 120 +/- 75, P = 0.03), and significant reduction of ORS intake tin milliliters per kilogram per day) (HEY vs. placebo; 84 +/- 46 vs. 122 +/- 72, P = 0.008) on day 1 and clearance of virus on day 4 (HEY vs. placebo; 73% vs. 36%, P = 0.02). There was, however, no difference in diarrheal duration between the groups.

Conclusions: Treatment with HEY against four human rotavirus strains

resulted in modest improvement of diarrhea associated with earlier clearance of rotavirus from stools. These results indicate an encouraging role of HEY in the treatment of rotavirus-induced diarrhea in children. Further studies are needed to optimize the dose and neutralization titer and thus improve the efficacy of **egg yolk** immunoglobulin **IgY** derived from immunized hens.

L5 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2002 ACS
2000:111300 Document No. 133:57336 The influence of **egg-yolk** immunoglobulin on adherence of **Streptococcus mutans**. Okumura, Noriko (Dep. Prevent. Community Dent., Osaka Dent. Univ., Japan). Koku Eisei Gakkai Zasshi, 50(1), 89-97 (Japanese) 2000. CODEN: KEGZA7. ISSN: 0023-2831. Publisher: Nippon Koku Eisei Gakkai.

AB The purpose of this study is to evaluate the influence of passive immunization with **egg-yolk** Ig (**IgY**) on inhibition of streptococcal adherence. In the 1st expt. for the influence of **IgY** on initial attachment of mutans streptococci to hydroxyapatite beads (HAp, 0.3-0.6 mm), the amts. of bacteria were measured by spectrophotometer in four kinds of solns.: solns. of specific **IgY** to S. mutants MT 8148, specific **IgY** to S. sobrinus 6715, nonspecific **IgY**, and without **IgY**. In the 2nd expt. for the influence of **IgY** on sucrose-dependent adherence of mutans streptococci to silver wire (diam. 0.8 mm), the amts. of bacteria were measured by spectrophotometer under the condition of sucrose-contained culture in various **IgY** solns. Specific **IgY** to S. mutans MT 8148 prevented the initial attachment of mutans streptococci, which had similar immunity characteristics to S. mutans MT 8148. Specific **IgY** to S. sobrinus 6715 did not inhibit initial attachment of mutans streptococci, but inhibited sucrose-dependent adherence of mutans streptococci. Specific **IgY** to S. sobrinus 6715 did not bind to the serotype-specific antigen on the surface of mutans streptococci, but did to the insol. glucan surrounding the cell surface of mutans streptococci. These results suggested the possibilities of preventing dental plaque accumulation by **IgY**.

L5 ANSWER 4 OF 9 SCISEARCH COPYRIGHT 2002 ISI (R)
2000:300403 The Genuine Article (R) Number: 303ZH. Peroral immunotheraphy with yolk **antibodies** for the prevention and treatment of enteric infections. Carlander D; Kollberg H; Wejaker P E; Larsson A (Reprint). UNIV UPPSALA HOSP, DEPT MED SCI, S-75185 UPPSALA, SWEDEN (Reprint); UNIV UPPSALA HOSP, DEPT MED SCI, S-75185 UPPSALA, SWEDEN; CHILDRENS UNIV HOSP, DEPT PEDIAT, S-75185 UPPSALA, SWEDEN. IMMUNOLOGIC RESEARCH (APR 2000) Vol. 21, No. 1, pp. 1-6. Publisher: HUMANA PRESS INC. 999 RIVERVIEW DRIVE SUITE 208, TOTOWA, NJ 07512. ISSN: 0257-277X. Pub. country: SWEDEN. Language: English.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Oral administration of specific **antibodies** is an attractive approach to establish protective immunity against gastrointestinal pathogens in humans and animals. The increasing number of antibiotic-resistant bacteria emphasize the need to find alternatives to antibiotics. Immunotherapy can also be used against pathogens that are difficult to neat with traditional antibiotics.

Laying hens are very good producers of specific **antibodies**. After immunization, the specific **antibodies** are transported to the **egg yolk** from which the **antibodies** then can be purified. A laying hen produces more than 20 g of yolk **antibodies** (**IgY**) per year. These **antibodies** also have biochemical properties that make them attractive for peroral immunotherapy: They neither activate mammalian complement nor interact with mammalian Fc receptors that could mediate inflammatory response in the gastrointestinal tract. Eggs are also normal dietary components and

thus there is practically no risk of toxic side effects of **IgY**. Yolk **antibodies** have been shown in several studies to prevent bacterial and viral infections.

L5 ANSWER 5 OF 9 MEDLINE

2000396936 Document Number: 20031733. PubMed ID: 10563850. Productivity and some properties of immunoglobulin specific against **Streptococcus mutans** serotype c in chicken **egg yolk** (**IgY**). Chang H M; Ou-Yang R F; Chen Y T; Chen C C. (Graduate Institute of Food Science and Technology, National Taiwan University, Taipei 106, Taiwan.) JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY, (1999 Jan) 47 (1) 61-6. Journal code: 0374755. ISSN: 0021-8561. Pub. country: United States. Language: English.

AB Hens were immunized on thighs by using whole cells of **Streptococcus mutans** MT8148 serotype c strain as antigen through intramuscular (im) and subcutaneous (sc) routes to investigate the difference of immunization reactions and the changes in yolk antibody activities against antigen after initial immunization. Several properties of crude **IgY** were examined to evaluate the stability during food processing. Results showed that the specificity of **IgY** of im treated hens was nearly 10 times as high as those of sc treated antibody. **IgY** from the hens immunized with the serotype c strain showed significant cross-reactions against serotypes e and f, while minor reactions against serotypes a, b, d, and g were observed. In thermal stability tests, **IgY** activity in both yolk and crude **IgY** decreased with the increasing temperature, from 70 to 80 degrees C, but the thermal denaturation rates between those two samples were not significantly different. The addition of high levels sucrose, maltose, glycerol, or 2% glycine displayed effective protection against thermal denaturation of **IgY**. Lyophilized yolk-5% gum arabic powder showed better stability against proteases.

L5 ANSWER 6 OF 9 MEDLINE DUPLICATE 2

97341640 Document Number: 97341640. PubMed ID: 9197932. Passive immunization against dental plaque formation in humans: effect of a mouth rinse containing **egg yolk antibodies** (**IgY**) specific to **Streptococcus mutans**. Hatta H; Tsuda K; Ozeki M; Kim M; Yamamoto T; Otake S; Hirasawa M; Katz J; Childers N K; Michalek S M. (Taiyo Kagaku Co., Ltd., Central Research Laboratories, Mie, Japan.) CARIES RESEARCH, (1997) 31 (4) 268-74. Journal code: 0103374. ISSN: 0008-6568. Pub. country: Switzerland. Language: English.

AB Passive immunization involving the delivery of **antibodies** specific to pathogens of infectious diseases to the host has been an attractive approach to establish protective immunity against a variety of microbial pathogens, including **Streptococcus mutans**, which is the principal etiologic agent of dental caries in humans. The overall purpose of the present study was to determine the effectiveness of a mouth rinse containing **antibodies** to S. mutans in preventing the establishment of this bacterium in dental plaque of humans. The **antibodies** were derived from **egg yolks** obtained from hens immunized with whole cells of S. mutans grown in sucrose-containing medium. The immunoglobulin derived from the yolks (**IgY**) of immunized hens was characterized in vitro and in vivo in human volunteers. Cross-reactivity tests showed that immune **IgY** reacted with every serotype, except serotype b, which had lost its GTase activity, when the bacteria were cultured in sucrose-containing medium. Immune **IgY** inhibited S. mutans adherence to saliva-coated hydroxyapatite discs by 59.2%, while control **IgY** caused an inhibition of only 8.2%. In the short-term (4-hour) test using a mouth rinse containing 10% sucrose, immune **IgY** decreased the ratio of the percentage of S. mutans per total streptococci in saliva. In the

long-term (7-day) test using a mouth rinse without sucrose, the ratio in saliva was not significantly reduced in the volunteers using the immune **IgY** due to the large standard deviation. However, comparing the ratios of the percentage of S. mutans per total streptococci in plaque of individual subjects, there was a tendency for a reduction of the ratios in the volunteers receiving the mouth rinse containing immune **IgY**. These results support the effectiveness of **IgY** with specificity to S. mutans grown in the presence of sucrose as an efficient method to control the colonization of mutans streptococci in the oral cavity of humans.

L5 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2002 ACS
1995:470444 Document No. 122:262959 Egg **antibodies** and prevention of infection by oral passive immunization. Ozeki, Makoto; Hatta, Hajime; Kim, Mujo (Cent. Res. Lab., Taiyo Kagaku Co., Ltd., Yokkaichi, 510, Japan). Kagaku (Kyoto, Japan), 50(4), 230-5 (Japanese) 1995. CODEN: KAKYAU. ISSN: 0451-1964.
AB A review with 15 refs., on the prepn. of **egg yolk antibodies, IgY**, and prevention of **Streptococcus mutans** and human rotavirus infections by oral passive immunization using **IgY**.

L5 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2002 ACS
1992:254461 Document No. 116:254461 Egg containing antibody to **Streptococcus mutans** as prophylactics for dental caries. Hatta, Hajime; Kanetake, Masa; Otake, Shigeo (Taiyo Kagaku K. K., Japan). Jpn. Kokai Tokkyo Koho JP 04071465 A2 19920306 Heisei, 14 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-182944 19900710.
AB Chicken antibody to **Streptococcus mutans** is prepd. and the **egg yolk** contg. the antibody is used for prepg. food or beverage as prophylactics for dental caries. Immunization of chicken with S. mutans, detn. the antibody in the **egg yolk** (**IgY**), and manuf. of a variety of food such as chocolate contg. **IgY** were demonstrated. A 2-mo study on rats showed that the chocolate contg. 0.1% **IgY** reduced the caries by approx. 40%.

L5 ANSWER 9 OF 9 SCISEARCH COPYRIGHT 2002 ISI (R)
91:184944 The Genuine Article (R) Number: FD585. PROTECTION OF RATS AGAINST DENTAL-CARIES BY PASSIVE-IMMUNIZATION WITH HEN-**EGG-YOLK** ANTIBODY (**IGY**). OTAKE S (Reprint); NISHIHARA Y; MAKIMURA M; HATTA H; KIM M; YAMAMOTO T; HIRASAWA M. NIHON UNIV, SCH DENT, DEPT CLIN PATHOL, 870-1 SAKAECHONISHI 2, MATSUDO, CHIBA 271, JAPAN (Reprint); NIHON UNIV, SCH DENT, DEPT MICROBIOL, MATSUDO, CHIBA 271, JAPAN; TAIYO KAGAKU CO LTD, CENT RES LABS, YOKKAICHI 510, JAPAN. JOURNAL OF DENTAL RESEARCH (1991) Vol. 70, No. 3, pp. 162-166. Pub. country: JAPAN. Language: ENGLISH. *ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*
AB Hen-**egg-yolk** antibody (**IgY**) was prepared against **Streptococcus mutans** MT8148 serotype c that was cultivated in medium containing sucrose, and it was used in passive caries-immunity studies. Specific pathogen-free rats infected with S. mutans MT8148 (c) and fed with a cariogenic diet containing more than 2% immune yolk powder developed significantly lower caries scores than did the ones infected with the same strain and fed with a diet containing only control yolk powder obtained from non-immunized hens. Similar results were obtained in an experiment with rats infected with S. mutans JC-2 (c) strain. Rats provided a diet supplemented with 0.5% immune water-soluble protein fraction containing S. mutans-specific **IgY** and challenged with S. mutans MT8148 exhibited significantly fewer caries lesions, compared with control rats on the normal diet.

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FILE 'MEDLINE, EMBASE, BIOSIS, SCISEARCH, CAPLUS' ENTERED AT 18:53:29 ON 22 OCT 2002

L1 1423218 S ANTIBODIES
L2 1757 S L1 AND EGG YOLK
L3 415 S L2 AND IGY
L4 13 S L3 AND STREPTOCOCCUS MUTANS
L5 9 DUP REMOVE L4 (4 DUPLICATES REMOVED)

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L6 0 L5 AND TYPE C

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L7 12 L3 AND DENTAL CARIES

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L8 9 DUP REMOVE L7 (3 DUPLICATES REMOVED)

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L8 ANSWER 1 OF 9 MEDLINE DUPLICATE 1
2001248116 Document Number: 21189229. PubMed ID: 11292733. Passive transfer of immunoglobulin Y antibody to Streptococcus mutans glucan binding protein B can confer protection against experimental **dental caries**. Smith D J; King W F; Godiska R. (Department of Immunology, The Forsyth Institute, Boston, Massachusetts 02115, USA.) INFECTION AND IMMUNITY, (2001 May) 69 (5) 3135-42. Journal code: 0246127. ISSN: 0019-9567. Pub. country: United States. Language: English.

AB Active immunization with Streptococcus mutans glucan binding protein B (GBP-B) has been shown to induce protection against experimental **dental caries**. This protection presumably results from continuous secretion of salivary antibody to GBP-B, which inhibits accumulation of S. mutans within the oral biofilm. The purpose of this study was to explore the influence of short-term (9- or 24-day) passive oral administration of antibody to S. mutans GBP-B on the longer-term accumulation and cariogenicity of S. mutans in a rat model of **dental caries**. Preimmune chicken **egg yolk** immunoglobulin Y (**IgY**) or **IgY** antibody to S. mutans GBP-B was supplied in lower (experiment 1) and higher (experiment 2) concentrations in the diet and drinking water of rats for 9 (experiment 1) or 24 (experiment 2) days. During the first 3 days of **IgY** feeding, all animals were challenged with 5 x 10(6) streptomycin-resistant S. mutans strain SJ-r organisms. Rats remained infected with S. mutans for 78 days, during which rat molars were sampled for the accumulation of S. mutans SJ-r bacteria and total streptococci. Geometric mean levels of S. mutans SJ-r accumulation on molar surfaces were significantly lower in antibody-treated rats on days 16 and 78 of experiment 2 and were lower on all but the initial (day 5) swabbing occasions in both experiments. Relative to controls, the extent of molar **dental caries** measured on day 78 was also significantly decreased. The decrease in molar caries correlated with the amount and duration of antibody administration. This is the first demonstration that passive antibody to S. mutans GBP-B can have a protective effect against cariogenic S. mutans infection and disease. Furthermore, this decrease in infection and disease did not require continuous antibody administration for the duration of the infection period. This study also indicates that antibody to components putatively involved only in cellular aggregation

can have a significant effect on the incorporation of mutans streptococci in dental biofilm.

L8 ANSWER 2 OF 9 SCISEARCH COPYRIGHT 2002 ISI (R)
2001:41278 The Genuine Article (R) Number: 388KG. Randomized, placebo-controlled, clinical trial of hyperimmunized chicken **egg yolk** immunoglobulin in children with rotavirus diarrhea. Sarker S A (Reprint); Casswall T H; Juneja Y R; Hoq E; Hossain I; Fuchs G J; Hammarstrom L. Ctr Hlth & Populat Res, ICDDRB, Div Clin Sci, Dhaka 1212, Bangladesh (Reprint); Huddinge Univ Hosp, Karolinska Inst, Dept Immunol Microbiol Pathol & Infect Dis, Stockholm, Sweden; Huddinge Univ Hosp, Karolinska Inst, Dept Clin Sci, Div Pediat, Stockholm, Sweden; Taiyo Kagaku Co Ltd, Nutr Foods Div, Yokkaichi, Japan. JOURNAL OF PEDIATRIC GASTROENTEROLOGY AND NUTRITION (JAN 2001) Vol. 32, No. 1, pp. 19-25. Publisher: LIPPINCOTT WILLIAMS & WILKINS. 530 WALNUT ST, PHILADELPHIA, PA 19106-3621 USA. ISSN: 0277-2116. Pub. country: Bangladesh; Sweden; Japan. Language: English.
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Background: Hyperimmunized bovine colostrum containing **antibodies** has been shown to be effective in the treatment of rotavirus diarrhea. **Antibodies** derived from eggs of immunized hens may be a less expensive and more practical alternative. In this study, children with proven rotavirus diarrhea were treated with immunoglobulin extracted from eggs of chicken immunized with human rotavirus strains.

Methods: In a randomized, double-blind study, 79 children with known rotavirus diarrhea were assigned to receive either 10 g hyperimmune **egg yolk** (HEY) daily in four equally divided doses for 4 days (HEY group) or a similar preparation obtained from nonimmunized chicken (placebo group). The daily stool frequency and amount, oral rehydration solution (ORS) intake, and presence of rotavirus in the stool were monitored for 4 days.

Results: In the HEY-treated group. there was significant reduction in stool output (in grams per kilogram per day; HEY vs. placebo; 87 +/- 59 vs. 120 +/- 75, P = 0.03), and significant reduction of ORS intake tin milliliters per kilogram per day) (HEY vs. placebo; 84 +/- 46 vs. 122 +/- 72, P = 0.008) on day 1 and clearance of virus on day 4 (HEY vs. placebo; 73% vs. 36%, P = 0.02). There was, however, no difference in diarrheal duration between the groups.

Conclusions: Treatment with HEY against four human rotavirus strains resulted in modest improvement of diarrhea associated with earlier clearance of rotavirus from stools. These results indicate an encouraging role of HEY in the treatment of rotavirus-induced diarrhea in children. Further studies are needed to optimize the dose and neutralization titer and thus improve the efficacy of **egg yolk** immunoglobulin **IgY** derived from immunized hens.

L8 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2002 ACS
1999:426415 Document No. 131:183483 **Egg yolk antibodies**: prevention of infectious disease using **IgY**. Hatta, Hajime (Japan). Kyoto Joshi Daigaku Shokumotsu Gakkaishi, 53, 1-11 (Japanese) 1998. CODEN: KJDSB7. ISSN: 0289-3827. Publisher: Kyoto Joshi Daigaku Shokumotsu Gakkai.

AB A review with 25 refs. The IgG found in blood serum of hen in known to transfer to yolk of egg laid by the hen to give acquired immunity to the offspring. The antibody in **egg yolk** has been referred to as **IgY**. A tremendous no. of hens are being systematically immunized with several antigens (vaccination) to protect the hens from infectious diseases, and managed to lay eggs as scheduled for com. transaction. Hen eggs, therefore, are now considered to be a potential source of a large-scale prodn. of antibody (**IgY**). An important application of **IgY** is for passive immunization therapy in which

the specific binding ability to the antigens (pathogens, venoms, etc.) serves to neutralize the biol. activities of those antigens. Passive immunization seems to be one of the most valuable application of antibody in which pathogen-specific **IgY** is administered to individuals to result in prevention from infectious diseases. Passive immunization tests using **IgY** is order to prevent rotavirus diarrhea, **dental caries**, and fish disease are discussed. The antigen-specific **IgY** was prepd. in an industrial scale from eggs laid by the hens immunized with selected antigens. Therefore, eating **antibodies** (**IgY**) will be practical for prevention of infectious diseases.

L8 ANSWER 4 OF 9 MEDLINE DUPLICATE 2

97341640 Document Number: 97341640. PubMed ID: 9197932. Passive immunization against dental plaque formation in humans: effect of a mouth rinse containing **egg yolk antibodies** (**IgY**) specific to Streptococcus mutans. Hatta H; Tsuda K; Ozeki M; Kim M; Yamamoto T; Otake S; Hirasawa M; Katz J; Childers N K; Michalek S M. (Taiyo Kagaku Co., Ltd., Central Research Laboratories, Mie, Japan.) CARIES RESEARCH, (1997) 31 (4) 268-74. Journal code: 0103374. ISSN: 0008-6568. Pub. country: Switzerland. Language: English.

AB Passive immunization involving the delivery of **antibodies** specific to pathogens of infectious diseases to the host has been an attractive approach to establish protective immunity against a variety of microbial pathogens, including Streptococcus mutans, which is the principal etiologic agent of **dental caries** in humans. The overall purpose of the present study was to determine the effectiveness of a mouth rinse containing **antibodies** to S. mutans in preventing the establishment of this bacterium in dental plaque of humans. The **antibodies** were derived from **egg yolks** obtained from hens immunized with whole cells of S. mutans grown in sucrose-containing medium. The immunoglobulin derived from the yolks (**IgY**) of immunized hens was characterized in vitro and in vivo in human volunteers. Cross-reactivity tests showed that immune **IgY** reacted with every serotype, except serotype b, which had lost its GTase activity, when the bacteria were cultured in sucrose-containing medium. Immune **IgY** inhibited S. mutans adherence to saliva-coated hydroxyapatite discs by 59.2%, while control **IgY** caused an inhibition of only 8.2%. In the short-term (4-hour) test using a mouth rinse containing 10% sucrose, immune **IgY** decreased the ratio of the percentage of S. mutans per total streptococci in saliva. In the long-term (7-day) test using a mouth rinse without sucrose, the ratio in saliva was not significantly reduced in the volunteers using the immune **IgY** due to the large standard deviation. However, comparing the ratios of the percentage of S. mutans per total streptococci in plaque of individual subjects, there was a tendency for a reduction of the ratios in the volunteers receiving the mouth rinse containing immune **IgY**. These results support the effectiveness of **IgY** with specificity to S. mutans grown in the presence of sucrose as an efficient method to control the colonization of mutans streptococci in the oral cavity of humans.

L8 ANSWER 5 OF 9 SCISEARCH COPYRIGHT 2002 ISI (R)

96:909405 The Genuine Article (R) Number: VW074. Avian vitelline **antibodies** in diagnosis and research.. Gross M (Reprint); Speck J . UNIV GOTTINGEN, TIERARZTLICHES INST, GRONER LANDSTR 2, D-37073 GOTTINGEN, GERMANY (Reprint). DEUTSCHE TIERARZTLICHE WOCHENSCHRIFT (OCT 1996) Vol. 103, No. 10, pp. 417-422. Publisher: M H SCHAPER GMBH CO KG. POSTFACH 16 42 16 52 KALANDSTRASSE 4, W-3220 ALFELD, GERMANY. ISSN: 0341-6593. Pub. country: GERMANY. Language: German.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Hens were immunized with bacterial polysaccharide (alginate), Hepatitis B surface antigen (HBsAS), and potato viruses (PVA, PVS, PVM, PVX, and

PVY). The **antibodies** were isolated noninvasively from the yolks of laid eggs.

The purified yolk immunoglobulins (**IgY**) were tested in an array of various assays and diagnostic techniques. The methods employed were precipitation reactions, immun-electrophoresis, ELISA (after biotinylation of **IgY**), immuno-gold electron microscopy, and western and immune blotting. Some of these methods had to be modified according to the special requirements of avian **antibodies**. The special handling of this animal system is described in regard to antibody production. The results demonstrate that **IgY** derived from hens can replace IgG produced by traditional methods in mammals. The advantages of this alternate animal system are emphasized in respect to animal care, high productivity, and special suitability of avian **antibodies** for certain diagnostic purposes.

L8 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2002 ACS
1995:128049 Document No. 122:16899 Production of **egg yolk** antibody (**IgY**) and its use. Hatta, Hajime; Akachi, Sigemitu; Kim, Mujo (Cent. Res. Lab., Taiyo Kagaku Co., Ltd., Yokkaichi, 510, Japan). Nippon Nogei Kagaku Kaishi, 68(10), 1457-62 (Japanese) 1994. CODEN: NNKKAA. ISSN: 0002-1407.

AB A review, with 41 refs., on antibody transfer from a parent bird to chicken, prodn. of specific **antibodies** in egg, difference between **IgY** and IgG, methods for mass prodn. of **IgY**, esp. on purifn., use of **IgY** for prevention of human rotavirus-induced diarrhea, Edwardsiella tarda infection of cultivated eel, **dental caries**, etc., and industrial significance of **IgY**.

L8 ANSWER 7 OF 9 SCISEARCH COPYRIGHT 2002 ISI (R)
94:601923 The Genuine Article (R) Number: PG294. **EGG-YOLK** ANTIBODY (**IGY**) STABILITY IN AQUEOUS-SOLUTION WITH HIGH SUGAR CONCENTRATIONS. SHIMIZU M (Reprint); NAGASHIMA H; HASHIMOTO K; SUZUKI T. UNIV TOKYO, DEPT AGR CHEM, TOKYO 113, JAPAN (Reprint); SHIZUOKA IND RES INST, DIV FOOD TECHNOL, SHIZUOKA 42112, JAPAN; UNIV SHIZUOKA, SCH FOOD & NUTR SCI, SHIZUOKA 422, JAPAN. JOURNAL OF FOOD SCIENCE (JUL/AUG 1994) Vol. 59, No. 4, pp. 763. ISSN: 0022-1147. Pub. country: JAPAN. Language: ENGLISH.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Effect of sugars on the stabilization of hen **egg yolk** immunoglobulin (**IgY**) under various processing conditions was investigated. By adding 30-50% (w/v) sucrose or invert sugar to an **IgY** solution heat denaturation of the **IgY** antibody at 75-80 degrees C was markedly suppressed. A high concentration of sugar was also effective to retain the **IgY** activity under acidic conditions of pH 3 or high pressure of 5,000 kg/cm(2) at 60 degrees C. Addition of high concentrations of sucrose may be a simple means to stabilize **IgY** for processing and preservation.

L8 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2002 ACS
1992:254461 Document No. 116:254461 Egg containing antibody to Streptococcus mutans as prophylactics for **dental caries**. Hatta, Hajime; Kanetake, Masa; Otake, Shigeo (Taiyo Kagaku K. K., Japan). Jpn. Kokai Tokkyo Koho JP 04071465 A2 19920306 Heisei, 14 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-182944 19900710.

AB Chicken antibody to Streptococcus mutans is prepd. and the **egg yolk** contg. the antibody is used for prepg. food or beverage as prophylactics for **dental caries**. Immunization of chicken with S. mutans, detn. the antibody in the **egg yolk** (**IgY**), and manuf. of a variety of food such as chocolate contg. **IgY** were demonstrated. A 2-mo study on rats showed that the chocolate contg. 0.1% **IgY** reduced the caries by

approx. 40%.

L8 ANSWER 9 OF 9 SCISEARCH COPYRIGHT 2002 ISI (R)
91:184944 The Genuine Article (R) Number: FD585. PROTECTION OF RATS AGAINST **DENTAL-CARIES** BY PASSIVE-IMMUNIZATION WITH HEN-**EGG-YOLK** ANTIBODY (**IGY**). OTAKE S (Reprint); NISHIHARA Y; MAKIMURA M; HATTA H; KIM M; YAMAMOTO T; HIRASAWA M. NIHON UNIV, SCH DENT, DEPT CLIN PATHOL, 870-1 SAKAECHONISHI 2, MATSUDO, CHIBA 271, JAPAN (Reprint); NIHON UNIV, SCH DENT, DEPT MICROBIOL, MATSUDO, CHIBA 271, JAPAN; TAIYO KAGAKU CO LTD, CENT RES LABS, YOKKAICHI 510, JAPAN. JOURNAL OF DENTAL RESEARCH (1991) Vol. 70, No. 3, pp. 162-166. Pub. country: JAPAN. Language: ENGLISH.
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB Hen-**egg-yolk** antibody (**IgY**) was prepared against Streptococcus mutans MT8148 serotype c that was cultivated in medium containing sucrose, and it was used in passive caries-immunity studies. Specific pathogen-free rats infected with S. mutans MT8148 (c) and fed with a cariogenic diet containing more than 2% immune yolk powder developed significantly lower caries scores than did the ones infected with the same strain and fed with a diet containing only control yolk powder obtained from non-immunized hens. Similar results were obtained in an experiment with rats infected with S. mutans JC-2 (c) strain. Rats provided a diet supplemented with 0.5% immune water-soluble protein fraction containing S. mutans-specific **IgY** and challenged with S. mutans MT8148 exhibited significantly fewer caries lesions, compared with control rats on the normal diet.

```
=> s streptococcus mutans
L9        22587 STREPTOCOCCUS MUTANS

=> s l9 and type d
L10          33 L9 AND TYPE D

=> s l10 and type c
L11          21 L10 AND TYPE C

=> s l11 and (1:2)
L12           0 L11 AND (1:2)

=> s l11 and ratio
L13           3 L11 AND RATIO

=> dup remove l13
PROCESSING COMPLETED FOR L13
L14           1 DUP REMOVE L13 (2 DUPLICATES REMOVED)

=> d l14  cbib abs
```

L14 ANSWER 1 OF 1 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.DUPLICATE 1
78409570 EMBASE Document No.: 1978409570. Extracellular glucans synthesized by strains of two types of **Streptococcus mutans** in vitro. Trautner K.; Gehring F.; Lohmann D.. Dept. Exp. Dent., Univ. D8700 Wurzburg, Germany. Archives of Oral Biology 23/3 (175-181) 1978. CODEN: AOBIAR. Pub. Country: United Kingdom. Language: English.
AB 33 strains of S. mutans were used to synthesize extracellular polysaccharides in vitro. It was established by biochemical methods that 10 of these strains resembled S. mutans **type c**, and 23 **type d**. The extracellular polysaccharides were identified as glucans by acid hydrolysis and enzymic determination of the split products. The **type d** strains synthesized significantly higher amounts of extracellular polysaccharides per gram

bacterial mass than the **type c** strains. The **ratio** of soluble to insoluble polysaccharides was significantly higher with the **type c** strains. Repeated synthesis of extracellular polysaccharides by one strain of each type showed reproducible results. The differences with respect to amounts and types of extracellular polysaccharides might be due to the opposite action of streptococcal glucosyltransferase and glucanhydrolase.